In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1-91. (Canceled)

92. (Currently Amended) A method for the production of transgenic animals comprising:

a) transfecting a first non-human differentiated somatic cell or cell-line with a transgene construct containing a ~~first~~ DNA sequence;

b) selecting a transfected cell or cell-line into which the~~said first~~ DNA sequence has been inserted into the~~its~~ genome ~~of said first non-human differentiated somatic cell or cell-line~~, wherein the DNA sequence is operably linked to a promoter;

c) performing a first nuclear transfer procedure to generate a first transgenic animal at least heterozygous for the~~said first~~ DNA sequence, wherein the first transgenic animal and the selected transfected cell or cell-line are of the same species;

d) performing a biopsy or other cell selection technique to obtain cells to establish a second non-human differentiated somatic cell or cell-line from the~~said~~ first transgenic animal;

e) characterizing the~~said~~ second non-human differentiated somatic cell or cell-line ~~using molecular biology methods~~ to ensure that the second non-human differentiated somatic cell or cell-line is at least heterozygous for the~~said first~~ DNA sequence; ~~and~~

f) performing a second nuclear transfer procedure with at least one ~~one~~ cell of the~~said~~ second non-human differentiated somatic cell or cell-line ~~to produce at least a second transgenic animal at least heterozygous for said first DNA sequence~~; and,

g) producing a~~the~~ second transgenic animal at least heterozygous for the DNA sequence, wherein the second transgenic animal and the second non-human differentiated somatic cell or cell-line are of the same species.

93. (Currently Amended) The method of claim 92, wherein the~~said~~ first transgenic animal is at an embryonic stage of development.

94. (Currently Amended) The method of claim 92, wherein the~~said~~ first transgenic animal is at a fetal stage of development.

95. (Currently Amended) The method of claim 92, further comprising developing the~~said~~ first transgenic animal into an adult non-human animal.

96. (Currently Amended) The method of claim 92, wherein the~~said~~ first transgenic animal is a mammal.

97. (Currently Amended) The method of claim 92, wherein the~~said first~~ DNA sequence encodes a desired protein.

98. (Currently Amended) The method of claim 92, wherein the genetic composition of the~~said~~ first transgenic animal is characterized to confirm the presence and expression of the DNA sequence~~transgene~~.

99. (Currently Amended) The method of claim 92, wherein the~~said~~ first nuclear transfer procedure further comprises transferring the nucleus of the~~said~~ transfected cell into a suitable enucleated recipient cell of the same species, thereby obtaining a reconstituted cell.

100. (Currently Amended) The method of claim 92, wherein the~~said~~ first transgenic animal is biopsied so as to characterize the genome of the~~said~~ first transgenic animal.

101. (Currently Amended) The method of claim 92, wherein at least one cell from the~~said~~ second non-human differentiated somatic cell or cell-line is expanded through cell culture techniques prior to~~for~~ use in the~~said~~ second round of nuclear transfer so as to allow for the production of ~~produce~~ a multiplicity of animals transgenic for the~~said~~ DNA sequence~~of interest~~.

102. (Currently Amended) The method of claim 96, wherein the source of the~~said~~ differentiated somatic cell or cell-line is an ungulate.

103. (Currently Amended) The method of claim 102, wherein the~~said~~ ungulate is selected from the group consisting of bovine, ovine, porcine, equine, caprine and buffalo.

104. (Currently Amended) A method of preparing a genetically engineered transgenic mammal, comprising:

(a) inseminating a first female non-human mammal recipient with semen from a transgenic non-human animal of the same species ~~known to have~~that has a transgene present and expressed;

(b) obtaining a transgenic non-human embryo from the~~said~~ first female recipient;

(c) obtaining a differentiated somatic cell from the~~said~~ embryo;

(d) culturing the~~said~~ differentiated somatic cell in a suitable medium, such that a differentiated somatic cell line is obtained~~; and,~~

(e) performing a nuclear transfer procedure with cells from the~~said~~ differentiated somatic cell line~~cells~~ to produce at least one transgenic mammal at least heterozygous for the~~said~~ transgene, wherein the~~said~~ transgene encodes a desired gene actuated by a tissue-specific promoter, wherein the transgenic mammal is of the same species as the differentiated somatic cell line; and,

(f) producing the transgenic mammal.

105. (Canceled)

106. (Currently Amended) The method of claim 92, wherein the~~said~~ second non-human differentiated somatic cell or cell-line is obtained from an embryonic goat on or after day 10 of embryogenesis.

107. (Currently Amended) The method of claim 92, wherein the~~said~~ second non-human differentiated somatic cell or cell line is kept in an airtight container.

108. (Currently Amended) The method of claim 92, wherein the~~said first~~ DNA sequence codes for a biopharmaceutical protein product.

109. (Currently Amended) The method of claim [[108]]92, wherein the promoter is a~~said first DNA sequence encodes a desired gene that is actuated by at least one~~ beta-casein promoter.

110. (Canceled)

111. (Currently Amended) The method of claim 92, wherein the~~said~~ second non-human differentiated somatic cell or cell-line is obtained from the~~said~~ first transgenic animal by tissue dissociation means including enzymatic means and/or mechanical means.

112. (Currently Amended) The method of claim 92, wherein the~~said~~ second non-human differentiated somatic cell is a fibroblast, cumulus cell, neural cell, mammary cell or a myocyte or the~~said~~ second non-human differentiated somatic cell-line is from a fibroblast, cumulus cell, neural cell, mammary cell or a myocyte.

113. (Canceled)

114. (Currently Amended) The method of claim 104, wherein the~~said~~ transgene codes for a biopharmaceutical protein product.

115. (Currently Amended) The method of claim [[114]]104, wherein the~~said~~ tissue-specific promoter is a beta-casein promoter.

116. (Canceled)

117. (Currently Amended) The method of claim 104, wherein the~~said~~ second non-human differentiated somatic cell or cell-line is obtained from the~~said~~ first transgenic animal by tissue dissociation means including enzymatic means and/or mechanical means.

118. (Currently Amended) The method of claim 104, wherein the~~said~~ second non-human differentiated somatic cell is a fibroblast, cumulus cell, neural cell, mammary cell or a myocyte or the~~said~~ second non-human differentiated somatic cell-line is from a fibroblast, cumulus cell, neural cell, mammary cell or a myocyte.

119. (Currently Amended) The method of claim 92, wherein the DNA~~said transgene construct comprises a nucleic acid~~ sequence encodes~~encoding~~ a human polypeptide.

120. (Currently Amended) The method of claim 92, wherein insertion into the genome of the DNA sequence results in~~said transgene construct is capable of~~ knocking out the expression of ~~a gene~~an endogenous gene of the~~to said~~ first transgenic animal.

121. (Currently Amended) The method of claim 119, wherein the DNA sequence~~said transgene construct~~ further comprises a promoter, and wherein the ~~nucleic acid~~DNA sequence is under the control of the~~said~~ promoter.

122. (Currently Amended) The method of claim 121, wherein the~~said~~ promoter is a tissue-specific promoter.

123. (Currently Amended) The method of claim 122, wherein the~~said~~ tissue-specific promoter ~~is a promoter preferentially expressed~~induces expression in mammary gland epithelial cells.

124. (Currently Amended) The method of claim 123, wherein the~~said~~ promoter is selected from the group consisting of a beta-casein promoter, beta-lactoglobin promoter, whey acid protein promoter and lactalbumin promoter.

125. (Currently Amended) The method of claim 121, wherein the~~said~~ promoter is a caprine promoter.

126. (Currently Amended) The method of claim 119, wherein the~~said nucleic acid encodes a~~ polypeptide is selected from the group consisting of a hormone, an immunoglobin, a plasma protein, and an enzyme.

127. (Currently Amended) The method of claim 119, wherein the~~said nucleic acid encodes a~~ polypeptide is selected from the group consisting of an alpha-1 proteinase inhibitor, an alkaline phosphotase, an angiogenin, an extracellular superoxide dismutase, a fibrogen, a glucocerebrosidase, a glutamate decarboxylase, a human serum albumin, a myelin basis protein, a proinsulin, a soluble CD4, a lactoferrin, a lactoglobulin, a lysozyme, a lactoalbumin, an erythropoietin, a tissue plasminogen activator, a human growth factor, an antithrombin III, an insulin, a prolactin, and an alpha-1-antitrypsin.

128. (Currently Amended) The method of claim 92, wherein the~~said~~ second non-human differentiated somatic cell is a fibroblast or the~~said~~ second non-human differentiated somatic cell-line is from a fibroblast.

129. (Currently Amended) The method of claim 128, wherein the~~said~~ fibroblast is a primary fibroblast.

130. (Currently Amended) The method of claim 128, wherein the~~said~~ fibroblast is a primary derived fibroblast.